1. Introduction

The Opportunity Corridor Study proposes the construction of a new arterial roadway (boulevard) on a generally new alignment within the City of Cleveland, Cuyahoga County, Ohio. The purpose of this memorandum is to:

- Summarize previously completed analysis and recommendations associated with the Central Alternates;
- Present analysis of the Central Alternates completed as part of Step 6; and
- Identify conclusions and recommendations based on the Step 6 analysis.

2. Summary of Step 5 Analysis and Recommendations for Central Alternates

The Opportunity Corridor study area is divided into three geographic sections: West, Central, and East. The Central Section is located in the Kinsman, Buckeye and Fairfax neighborhoods between E. 75th Street and Quincy Avenue. During Step 5 of the PDP, three alternates were evaluated in the Central Section. The analyses of the Central Section alternates were presented in the Opportunity Corridor Conceptual Alternatives Study (CAS) prepared in October 2010. The CAS recommended eliminating one alternate from further study since it had the highest relative impact to the planned expansion of the Kenneth Johnson [Woodland] Recreation Center, a Section 4(f) resource. In addition, this alternate presented great challenges with respect to accommodating the local street network and existing rail operations.

A brief description of the Central Section alternates carried forward for further study in Step 6 is included below.

- Alternate A Generally, this proposed roadway alignment is the most westerly of the Central Alternates and is the closest to the NS Nickelplate Line. It would depress the boulevard under the existing Norfolk Southern mainline tracks which would be accommodated via a new rail structure. Alternate A would also create a discontinuity of Woodland Avenue.
- Alternate B This proposed roadway alignment is shifted slightly east from Alternate A. It would depress the boulevard under the existing Norfolk Southern mainline tracks which would be accommodated via a new rail structure. Alternate B would maintain continuity of existing Woodland Avenue, and would generally run parallel to the GCRTA Red Line trench north of Woodland Avenue.

In October 2010, the Central Section Alternates were presented to the public through a series of large open-house and neighborhood meetings. Those attending the public meetings expressed concerns regarding the discontinuity of Woodland Avenue created with Alternate A. Similar concerns were voiced by the City of Cleveland and the Buckeye Area Development Corporation. Due to these concerns, the majority of stakeholders





preferred Alternate B. One of the major employers in the project study area – Miceli Dairy Products – expressed concerns regarding the potential impacts of Central Alternate B on a planned expansion of their operations.

3. Step 6 - Analysis of Central Alternates

On January 5, 2011, the Northeast Ohio Areawide Coordinating Agency (NOACA) provided updated traffic projections. As a result, the traffic model and corresponding project-level traffic analysis were updated. The subsequent analysis showed that the proposed boulevard would operate at acceptable levels of service with only four lanes, a reduction of one through lane in each direction. Consequently, the design of Central Alternates A and B was revised to reflect the reduction in through lanes. The designs of the proposed intersections with the existing street network were also revised, as appropriate. In general, each of the proposed intersections with existing streets includes an exclusive left-turn lane on all four approaches. The exception to this is the proposed intersection with E. 79th Street which also has exclusive right-turn lanes on the northbound and southbound approaches.

The alignments and geometrics of Central Alternates A and B were further refined and the estimated benefits and impacts were updated. A "windshield" survey of the project area was also completed to determine the status of existing and demolished structures. The survey did not confirm occupancy of all residential and commercial business structures; however, several existing structures were boarded up and therefore identified as vacant. Additional coordination was also conducted with the City of Cleveland and Miceli Dairy Products to evaluate potential design modifications to Alternate B to minimize impacts to the planned expansion of the dairy. This coordination is ongoing and will continue throughout the project development process.

Appendix A contains exhibits showing the potential impacts to existing structures. Appendix A also contained exhibits showing the potential impacts to properties identified as having the potential to contain hazardous materials contamination. Phase I Environment Site Assessments (ESAs) were completed for each of these properties as they were identified as higher-risk sites. There are other ESA Screening sites within the study area that were recommended for further study as part of the Step 5 analysis. Those sites are not considered as part of this analysis. The detailed evaluation matrix for the Central Section Alternates is also included in Appendix A. A summary of the evaluation factors associated with each alternate is included in Table 1.





Table 1 – Comparative Summary of Central Section Alternates

Evaluation Criteria	Alternate A	Alternate B		
Impacts to Existing Street Network	 Creates discontinuity of Woodland Ave. between E. 89th St. and E. 93rd St. Requires cul-de-sac of E. 86th St. north of Woodland Ave., as well as E. 87th St. and E. 93rd St. south of Woodland Ave. Lisbon Rd. to be removed 	 Requires cul-de-sac of E. 89th St. north of NS railroad trench; E. 89th south of proposed boulevard; and Lisbon Rd. Tennyson Rd., Evins Rd., and E. 87th St. to be removed 		
Worst Operating Intersection	Quincy: LOS D	Quincy and E. 79th: LOS C		
Section 4(f) Resource Impacts	 Proposed median on boulevard would limit planned driveway access on Woodland Avenue to right-in/right-out only 	None		
Number of Phase I Environmental Site Assessment (ESA) Properties Impacted	7	12		
Residential Relocations	10	11		
Church/Faith-Based Organization Relocations	1	1		
Business Relocations	5	7		
Permanent Impacts to Transit Service	Extended bus routing times along Woodland Avenue due to discontinuity	None		
Estimated Cost from Conceptual Alternatives Study (October 2010)	\$73,200,000	\$83,500,000		
Locally Preferred?	No	Yes Preferred by City of Cleveland, Buckeye Area Development Corporation, and majority of general public		

Notes: All estimated impacts based on 4-lane typical section. Estimated costs for each geographic section are provided as a relative basis of comparison from the Conceptual Alternatives Study (October 2010). The estimated costs, which are based on a 6-lane typical section, are in 2010 dollars and will be updated once updated traffic projections are received and the proposed laneage is confirmed.





4. Conclusions and Recommendations

The Central Section Alternates were first evaluated based on their ability to satisfy the purpose of and need for the project. The purpose of the Opportunity Corridor project is to improve the transportation infrastructure, access, and mobility within a historically underserved, economically depressed area within the City of Cleveland. The specific needs to be addressed by the project include the following:

- Improve system linkage
- Improve mobility
- Support planned economic development

Central Alternates A and B are both components of corridor-wide alternatives to address the identified transportation needs in the project study area. Each alternate would require some modifications to the existing street network; however, only Central Alternate B would maintain the continuity of Woodland Avenue. Maintaining the continuity of Woodland Avenue is an important consideration with regard to improving system linkage and mobility in the project study area. Woodland Avenue is an east-west arterial that provides mobility and access to areas both within and adjacent to the project study area. From a broader perspective, Woodland Avenue is an important link in the transportation system which provides a direct connection between multiple neighborhoods located southeast of the Central Business District, including several immediately adjacent to University Circle. Central Alternate A would modify existing Woodland Avenue to force a series of turning movements in order to continue travel in an east-west direction. These turning movements result in a disconnection of Woodland Avenue in the project study area. This condition - referred to as the discontinuity of Woodland Avenue - would decrease mobility and reduce system linkage within the project study area. Therefore, when considered in the context of a corridor-wide alternative, Alternate B would better satisfy the purpose of and need for the project.

The estimated impacts and benefits associated with Central Alternates A and B are relatively similar. Although both would operate at acceptable levels of service, Alternate B would generally operate at improved levels. Central Alternate A, on the other hand, would result in fewer total relocations than Alternate B (16 vs. 19, respectively). Central Alternate A would also affect fewer properties identified as having the potential for hazardous materials contamination (7 vs. 12, respectively). Phase I Environment Site Assessments (ESAs) were completed for each of these properties as they were identified as higher-risk sites. There are several other ESA Screening sites within the study area that were recommended for further study as part of the Step 5 analysis. Those sites are not considered as part of this analysis.

Estimated costs from the October 2010 Conceptual Alternatives Study (CAS) were also considered as part of the alternates analysis. Although based on a 6-lane typical section, the estimated costs from the CAS report provide a relative basis of comparison between





the alternates. Based on the CAS data, Central Alternate B would cost approximately \$10.3 million more than Central Alternate A. This cost differential amounts to approximately 5-percent of the estimated total project cost (\$203.1 to \$213.4 million). Once the updated traffic projections are received and the number of through lanes and turn-lanes is confirmed, estimated project costs will be updated. It is anticipated that future updates to the estimated project costs would be proportional for both alternates and would remain a relatively small percentage of the total project costs. Due to this relatively small differential, estimated costs were not a primary factor in the selection of an alternate.

The City of Cleveland, the Buckeye Area Development Corporation, and the majority of the general public expressed a preference for maintaining the continuity of Woodland. Therefore, local stakeholders prefer Central Alternate B. Because the estimated benefits and impacts of the Central Alternates are nearly equivalent, the preference of the local stakeholders and relative ability to meet the purpose and need of the project are key decision-making factors. Because the local stakeholders prefer Central Alternate B and it would better satisfy the purpose and need of the project, it is recommended for further study as part of the Draft Environmental Impact Statement. Likewise, Central Alternate A is recommended to be eliminated from further study.

As stated previously, one of the specific needs to be addressed by the Opportunity Corridor project is to support planned economic development within the area between I-490/I-77 and the University Circle. Therefore, it is also recommended that coordination with the City of Cleveland and Miceli Dairy Products continue throughout the project development process to preserve the approximately 100 jobs associated with the dairy, as well as the anticipated new jobs that would be added within the study area as a result of the planned expansion.

The potential impacts presented in this memorandum are based on a proposed 4-lane boulevard. One specific purpose of the proposed Opportunity Corridor project is to support planned economic development. The traffic projections are currently being updated to incorporate planned economic development and redevelopment in the project area. As a result, the potential exists for a 6-lane typical section to be required to accommodate future traffic volumes. This decision regarding the typical section will be made as part of the detailed analysis completed for the Draft Environmental Impact Statement (DEIS). Increasing the number of proposed through-lanes and incorporating additional turn-lanes could increase the project impacts. However, the impacts should increase proportionally for both Central Alternate A and Central Alternate B. In addition, Alternate A would still create a discontinuity of Woodland Avenue. Therefore, these changes should not change the recommendations presented in this memorandum.





Appendix A

Step 6 Analysis – Potential Structure Impacts for Central Alternate A

Step 6 Analysis – Potential Structure Impacts for Central Alternate B

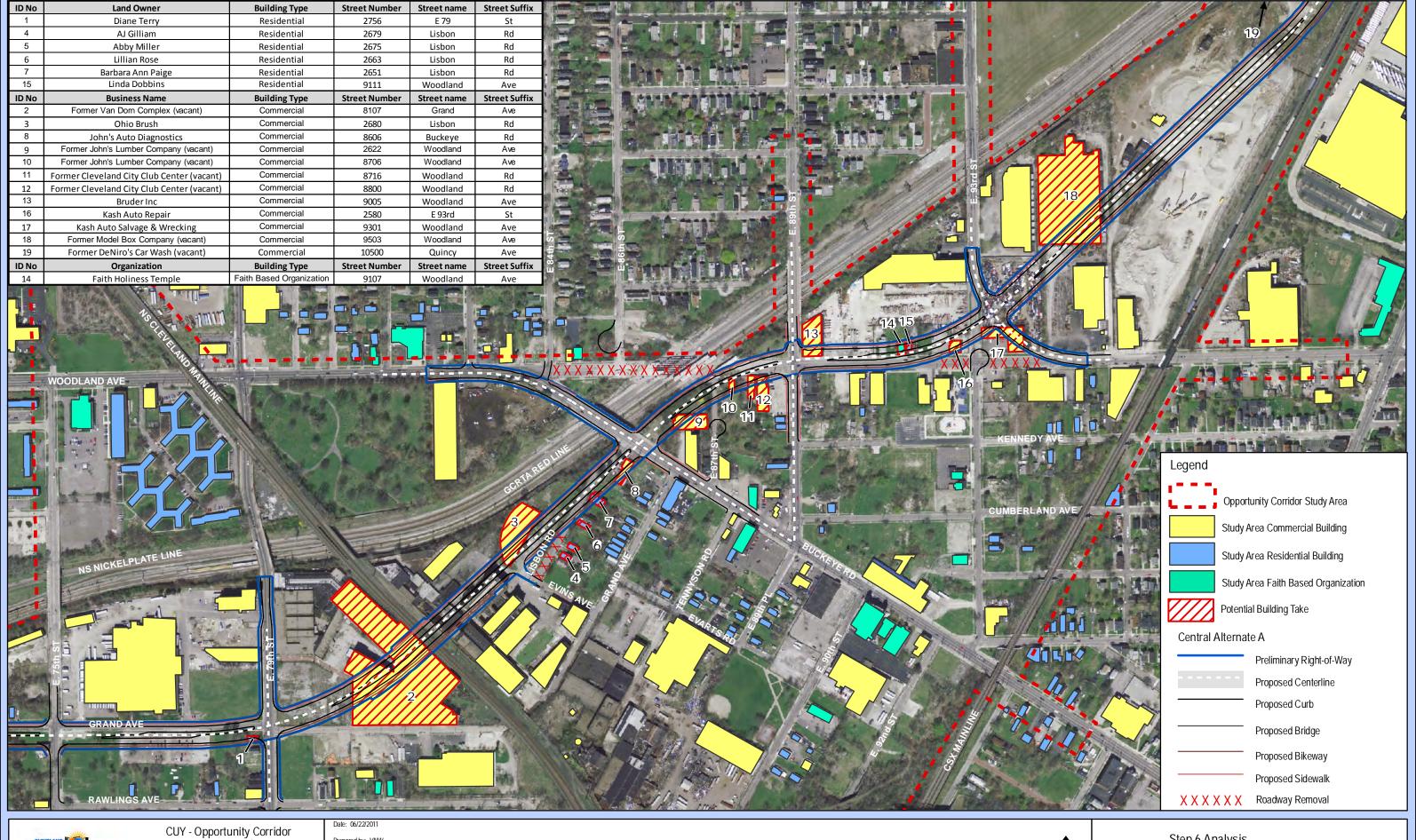
Step 6 Analysis – Potential Phase I ESA Property Impacts for Central Alternate A

Step 6 Analysis – Potential Phase I ESA Property Impacts for Central Alternate B

Step 6 Analysis – Evaluation Matrix for Central Section Alternates





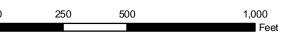




Prepared by: VNW

Note:
GIS data used to create this map are from the best sources available. Use of this map should be used only for planning purposes.

Aerial image is dated (circa 2005) and is shown only for illustrative purposes.





Step 6 Analysis
Potential Structure Impacts for
Central Alternate A







Prepared by: VNW

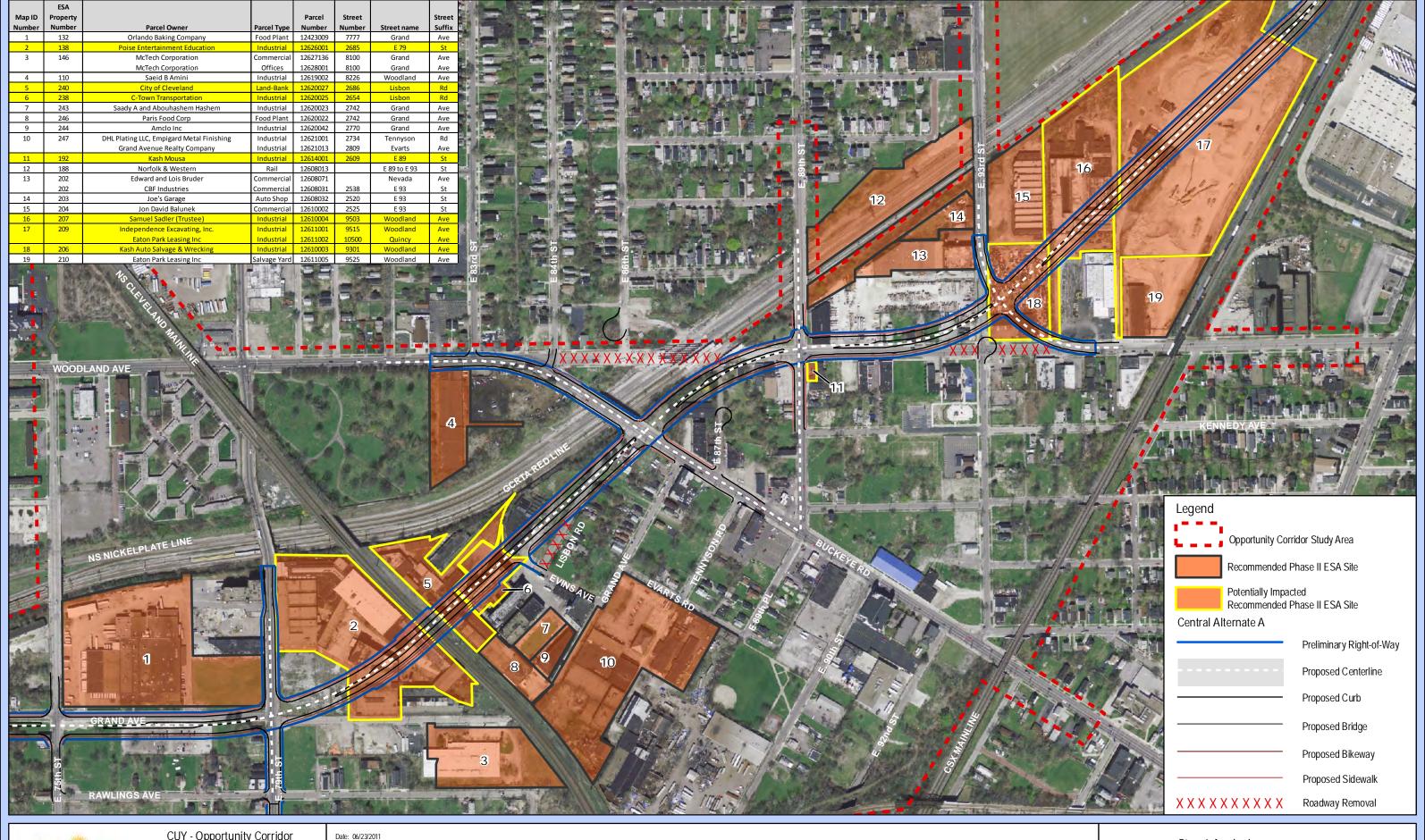
Note:
GIS data used to create this map are from the best sources available. Use of this map should be used only for planning purposes.

Aerial image is dated (circa 2005) and is shown only for illustrative purposes.



Step 6 Analysis
Potential Structure Impacts for
Central Alternate B

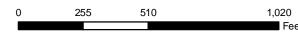






Date: 06/23/2011 Prepared by: VNW

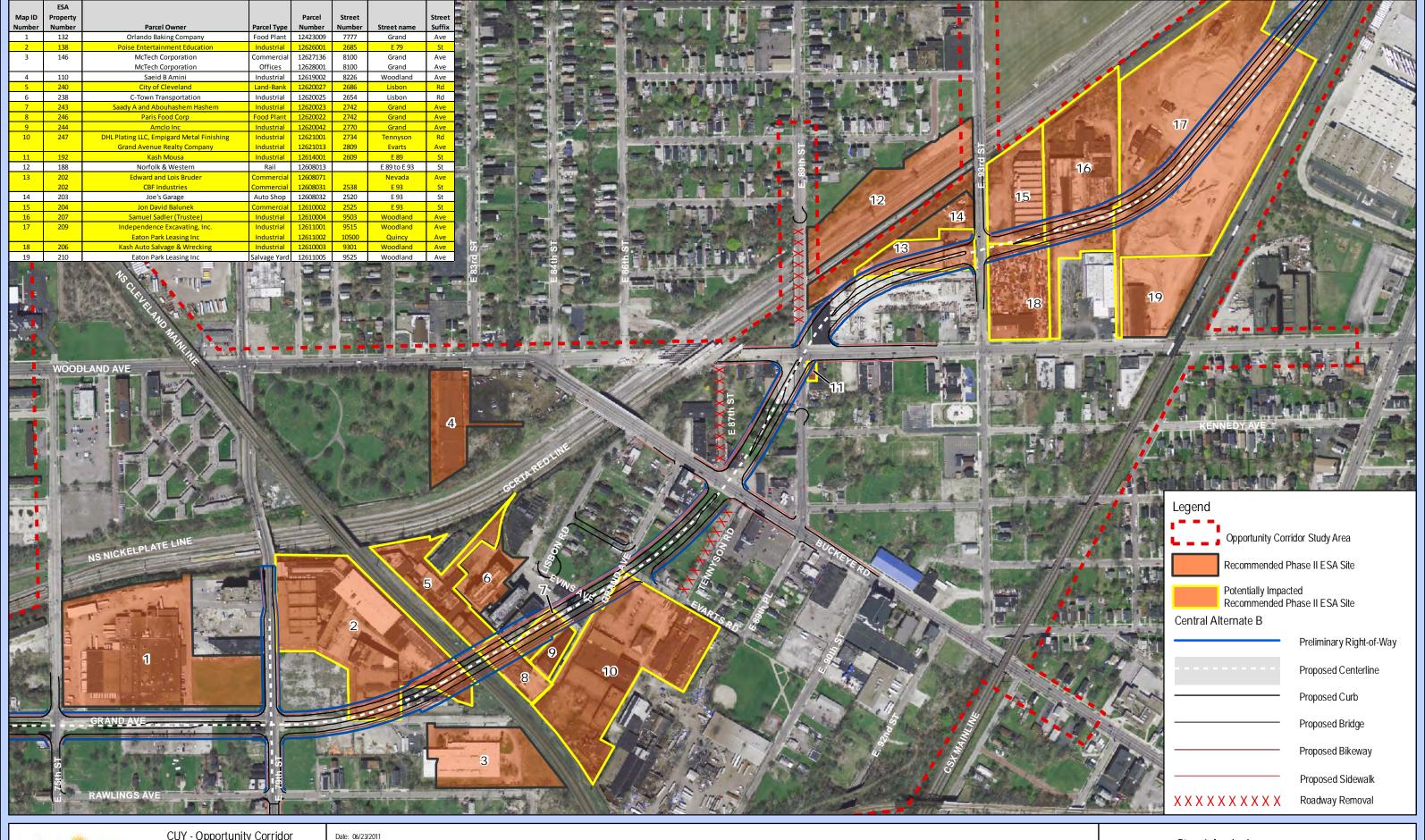
Note:
GIS data used to create this map are from the best sources available. Use of this map should be used only for planning purposes. Aerial image is dated (circa 2005) and is shown only for illustrative purposes.





Step 6 Analysis
Potential Phase I ESA Property Impacts for **HNTB** Central Alternate A







Date: 06/23/2011 Prepared by: VNW

Note:
GIS data used to create this map are from the best sources available. Use of this map should be used only for planning purposes.

Aerial image is dated (circa 2005) and is shown only for illustrative purposes.





Step 6 Analysis
Potential Phase I ESA Property Impacts for Central Alternate B



OPPORTUNITY CORRIDOR

Opportunity Corridor Step 6 - Central Section Alternates Evaluation Matrix

Evaluation Criteria/Alternate	Unit of Measure (Step 6)	Alternate A	Alternate B
Purpose and Need Issues			
System Linkage	Access changes and improvements to Interstate system access	Direct access to freeway system provided from arterial network at E. 79th, Buckeye, Woodland and Quincy via the Blvd.	Direct access to freeway system provided from arterial network at E. 79th, Buckeye, Woodland and Quincy via the Blvd.
Mobility	Impacts to existing street network	Discontinuity on Woodland Ave between E. 89th Street and E. 93rd Street; requires the cul-de-sac of E. 86th Street north of Woodland Avenue and E. 87th Street and E. 93rd Street south of Woodland; Lisbon Road to be removed.	Requires cul-de-sac of E. 89th Street north of NS railroad trench; E. 89th Street south of proposed boulevard, and Lisbon Road; E. 87th Street, Evins Avenue and Tennyson Road to be removed.
	Intersection Level of Service	E. 79th: LOS C Buckeye: LOS C E. 89th: LOS C E. 93rd/Woodland: LOS C Quincy: LOS D	E 79th: LOS C Buckeye: LOS B Woodland: LOS A E 93rd: LOS B Quincy: LOS C
Economic Development Potential	Direct/Improved access to City identified Opportunity Corridor Development Districts	 Improved site access created to/from Districts 4 and 9 via boulevard to E. 79th Street Direct access and new frontage (Improved visibility) created for Districts 2, 3, 5, 6 & 7 via boulevard 	 Improved site access created to/from Districts 4 and 9 via boulevard to E. 79th Street Direct access and new frontage (Improved visibility) created for Districts 2, 3, 5, 6 & 7 via boulevard
Modal Options	Bus, Bicycle and Pedestrian facilities (Improved, Neutral, or Reduced)	Improved • Addition of sidewalks and multi-purpose path connecting E55th to Kinsman and points east • Potential for new local and express bus service • Potential rerouting of No. 10 bus line (E105th to Quincy to Fairhill) and No. 11 bus line (Quincy to Fairhill)	Addition of sidewalks and multi-purpose path connecting E55th to Kinsman and points east Potential for new local and express bus service Potential rerouting of No. 10 bus line (E105th to Quincy to Fairhill) and No. 11 bus line (Quincy to Fairhill)
Community Benefits	Neighborhood - level benefits	 Addition of sidewalk and multi-purpose path along proposed boulevard Improved access to recreational amenities such as Kenneth L. Johnson Recreation Center and the proposed Kingsbury Run Connector Path in the Kinsman neighborhood, and the proposed Lake to Lakes trail in University Circle Potential for local jobs through creation of re-development opportunities Potential improvement to community cohesion through increased re-development opportunities and new connections between neighborhoods Potential support of existing commercial business through increased traffic/visibility Removal of abandoned structures within proposed right-of-way Relocation effects may benefit some residences and businesses Clean-up of sites of environmental concern within proposed right-of-way Opportunity for enhanced neighborhood identity through gateways, wayfinding and public art Aesthetic enhancement opportunities along proposed boulevard Enhanced security through traffic- and pedestrian-generated human presence Improved access to Interstate system 	Lake to Lakes trail in University Circle Potential for local jobs through creation of re-development opportunities Potential improvement to community cohesion through increased re-development opportunities and new connections between neighborhoods Potential support of existing commercial business through increased traffic/visibility

OPPORTUNITY CORRIDOR

Opportunity Corridor Step 6 - Central Section Alternates Evaluation Matrix

Evaluation Criteria/Alternate	Unit of Measure (Step 6)	Alternate A	Alternate B
Environmental resources			
Cultural Resources/Section 4(f)			
NRHP listed/NRHP eligible sites	Number of sites and extent of impact	 Possible Widening of Woodland Ave. for boulevard opposite of Ker Johnson (Woodland) Rec. Center 	1 Possible enneth
Cleveland Landmark sites impacted	Number of sites and extent of impact	 Possible Widening of Woodland Ave. for boulevard opposite of Ker Johnson (Woodland) Rec. Center 	1 Possible enneth • Widening of Woodland Ave. opposite of Kenneth Johnson (Woodland) Rec. Center
Parks/Recreational Facilities/Section 4(f)			
Parks/Recreational Facilities	Number of existing parks and extent of impact	Possible Widening of Woodland Ave. for boulevard opposite of exist Kenneth Johnson Rec. Center Proposed median on boulevard would limit planned drivew access on Woodland Avenue to right-in/right-out only	Johnson Rec. Center
Section 6(f)			
Section 6(f) Resource Impacts	Number of resources and extent of impact	None	None
Ecological	·		
Stream crossings	Number of stream crossing impacts	None	None
Quality wetland impacts	Number of wetlands impacted	None	None
Threatened and endangered species impacts	Yes / No	No	No
Hazardous materials			
High Probability Sites	Number of Phase 1 ESA sites	7 ESA Property Numbers: 138, 192, 206, 207, 209, 238, and	ESA Property Numbers: 138, 192, 202, 204, 206, 207, 209, 24 243, 244, 246, and 247
Environmental justice			
Benefits to environmental justice populations	Access; Mobility; Safety; Environmental; Visual; Economic; Community Impacts	Addition of sidewalk and multi-purpose path along propose boulevard and intersecting roadways Improved access to recreational amenities such as Kenned Johnson Recreation Center and the Kingsbury Run Connect Tow Path in the Kinsman neighborhood, and the proposed I to Lakes trail in University Circle Potential for local jobs through creation of re-development opportunities Potential support of existing commercial business through increased traffic Removal of abandoned structures within proposed right-oen Relocation effects may benefit some residences and businesses Clean-up of sites of environmental concern within proposed right-of-way Opportunity for enhanced neighborhood identity through gateways, wayfinding and public art Aesthetic enhancement opportunities along proposed boulevard Enhanced security through traffic- and pedestrian-general human presence Improved access to Interstate system	boulevard and intersecting roadways Ineth L. Improved access to recreational amenities such as Kenneth Johnson Recreation Center and the Kingsbury Run Connector Tow Path in the Kinsman neighborhood, and the proposed Lak to Lakes trail in University Circle Potential for local jobs through creation of re-development opportunities Potential support of existing commercial business through increased traffic Removal of abandoned structures within proposed right-of-w Relocation effects may benefit some residences and businesses Clean-up of sites of environmental concern within proposed right-of-way Opportunity for enhanced neighborhood identity through gateways, wayfinding and public art Aesthetic enhancement opportunities along proposed boulevard



Opportunity Corridor Step 6 - Central Section Alternates Evaluation Matrix

Evaluation Criteria/Alternate	Unit of Measure (Step 6)		Alternate A		Alternate B
Impacts to environmental justice populations	Traffic; Noise; Residential Relocations; Business Relocations; Community Impacts; Access; Temporary Construction Impacts		 Potential increase in traffic on intersecting roadways Potential noise increase resulting from higher traffic volumes Residential relocations Business displacements Temporary construction impacts (noise, vibration, dust) Displacement of Faith Holiness Temple Loss of Woodland Avenue and E93rd St. continuity 		 Potential increase in traffic on intersecting roadways Potential noise increase resulting from higher traffic volumes Residential relocations Business displacements Temporary construction impacts (noise, vibration, dust) Displacement of Greater Roman Baptist Church Loss of E89th St. continuity
Utility Relocation Issues					
Major Utility Concerns/Impacts (fiber optic; sub stations, etc.)	List of major utilities		NEORSD interceptor along Woodland (33"); buckeye (72") and E. 79th; 80" combined sewer along E79th; NEORSD Regulator at E79th/Grand; 5 fiber optic lines along NS Cleveland line; fiber optic along NS Nickelplate line; power transmission towers parallel to NS Cleveland line; water transmission lines along Quincy (48") and Woodland (48" & 30"); 8" gas main along E79th		NEORSD interceptor along Woodland (33"); buckeye (72") and E. 79th; 80" combined sewer along E79th; NEORSD Regulator at E79th/Grand; 5 fiber optic lines along NS Cleveland line; fiber optic along NS Nickelplate line; power transmission towers parallel to NS Cleveland line; water transmission lines along Quincy (48") and Woodland (48" & 30"); 8" gas main along E79th
Right of Way					
Structure Impacts*					
Residential	Number of structures impacted (estimate of units for relocation)	6 (10)	E. 79th Street - 1 (1) Lisbon Road - 4 (7) Woodland Avenue - 1 (2)	11 (11)	E. 79th Street - 1 (1) Tennyson Road - 3 (6) E. 89th Street - 3 (0) Grand Avenue - 4 (4)
Religious Structure Impacts	Number of structures impacted	1	Faith Holiness Temple	1	Greater Roman Baptist Church
Institutional/Civic Structure Impacts	Number/description of structures impacted (# relocations)	0	None	0	None
Commercial Structure Impacts	Number of structures impacted (# relocations) Description of businesses impacted	12 (5)	Former Van Dorn Complex (vacant); Ohio Brush; John's Auto Diagnostics; Former John's lumber company (vacant); Former Cleveland Club Center (vacant); Bruder Inc.; Kash Auto Repair; Kash Auto Salvage and Wrecking; Former Model Box Co. Indust. building (vacant); Former DeNiro's Car Wash (vacant)	16 (7)	Former Van Dorn Complex (vacant); Paris Food Corp; Amclo Inc.; Former Empigard Metal finishing (vacant and part demo.); Super Service/Peacock Autobody; Final Cut; Former John's lumber company (vacant); Former Cleveland Club Center (vacant); Bruder Inc.; CBF Industries; Former Peerless Auto Indust. building (vacant); former Model Box Co. Indust. building (vacant); Former DeNiro's Car Wash (vacant)
Freight Rail Impacts	Extent of Permanent or Temporary R/W Impacts		NS - temporary restrictions to mainline due to construction of new mainline structure over Boulevard; potential temporary restrictions to Nickelplate line due to Buckeye Road bridge widening and Woodland Avenue bridge demolition.		NS - temporary restrictions to mainline due to construction of new mainline structure over Boulevard; potential temporary restrictions to Nickelplate line due to E. 89th Street bridge demolition.
GCRTA Impacts	Extent of Permanent or Temporary R/W Impacts		Potential temporary restrictions to Red Line due to Buckeye Road bridge widening and Woodland Ave. bridge demolition; Extended bus routing times along Woodland Avenue due to discontinuity.		Potential temporary restrictions to Red Line due to E. 89th Street bridge demolition
Structures					
Roadway Bridges	Location and number of new/rebuilt roadway bridges required	1	Rebuilt Buckeye bridge over NS/RTA;	0	None
Rail Bridges	Location and number of new/rebuilt rail bridges	1	New NS rail bridge over Boulevard	1	New NS rail bridge over Boulevard



Opportunity Corridor Step 6 - Central Section Alternates Evaluation Matrix

Evaluation Criteria/Alternate	Unit of Measure (Step 6)	Alternate A	Alternate B
Public Comment			
City of Cleveland	Preferred/Less preferred	Less preferred	Preferred. During a coordination meeting on January 5, 2011, the City of Cleveland stated that they preferred a continuous Woodland Avenue.
Community Development Corporations	Preferred/Less preferred	Less preferred	Preferred. Buckeye Development Corporation (BADC) made a statement in support of a continuous Woodland Avenue at the October 6, 2010 public meeting at Kenneth L. Johnson Recreation Center. BADC is focusing their energy on the neighborhood surrounding Woodland and the discontinuity of Alternate A could hinder the development potential.
General Public	Preferred/Less preferred	Preferred by one local business based on avoidance of potential expansion area	Preferred by public based on public comments
Cost Data (2010 Dollars)			
Estimated Cost from Conceptual Alternatives Study (October 2010)	Estimated Cost (range)	\$73,200,000	\$83,500,000
Recommended for further Study	Yes/No	No	Yes

Notes: All estimated impacts are based on a 4-lane typical section. Estimated costs for each alternate are provided as a relative basis of comparison from the Conceptual Alternatives Study (October 2010). The estimated costs, which are based on a 6-lane typical section, are in 2010 dollars and will be updated once updated traffic projections are received and the proposed laneage is confirmed.